Title of Instructional Materials: Holt McDougal Alg I

Grade Level: Algebra I

Summary of Holt McDougal Alg I

Overall Rating: ☒ Weak (1-2) ☐ Moderate (2-3) ☐ Strong (3-4) **Summary / Justification / Evidence:** An alternative approach is presented in the Algebra Labs; however, they are not integrated into the lessons themselves. This book focuses on just the skills and procedures without big ideas and connections.	Important Mathematical Ideas: ☒ Weak (1-2) ☐ Moderate (2-3) ☐ Strong (3-4) **Summary / Justification / Evidence:** Topics tend to be disconnected and taught as isolated topics. There is little taught as multiple approaches (ie factoring lessons 8.3 - 8.5, excluding optional Algebra Labs). Little to no multiple approaches given.
Skills and Procedures: ☒ Weak (1-2) ☐ Moderate (2-3) ☐ Strong (3-4) **Summary / Justification / Evidence:** These were not developed conceptually (ie equations 2.1-2.3 and exponents 8-3). The skills were taught in isolation, and the procedure is the primary focus as each new lesson begins with the "how-to" and 4-5 worked out examples. Without requiring students to think, they are told to follow step-by-step instructions to solve each problem (p. 113).	Mathematical Relationships: ☒ Weak (1-2) ☐ Moderate (2-3) ☐ Strong (3-4) **Summary / Justification / Evidence:** Most problems only require the use of skils and procedures focused on in that lesson. Critical thinking and error analysis type problems are presented late in the problem set instead of being incorporated early in the learning to reinforce conceptual understanding (lesson 6-4 - critical thinking #29 and error analysis #31).

Holt McDougal Alg I
↳ Seems to cover the standards; not as thorough as some, but would definitely be a contender
↳ supplemental material definitely helps.

INDIANA'S EDUCATION ROUNDTABLE 2010

Instructional Materials Analysis and Selection

Phase 3: Assessing Content Alignment to the Common Core State Standards for Mathematics

Traditional Pathway for High School: Algebra I

a project of
The Charles A. Dana Center
at the University of Texas at Austin

Instructional Materials Analysis and Selection

Phase 3:

Assessing Content Alignment to the Common Core State Standards for Mathematics

A project of

The Indiana Education Roundtable, The Indiana Department of Education,

and

The Charles A. Dana Center at The University of Texas at Austin

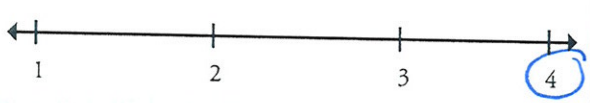
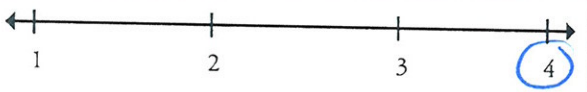
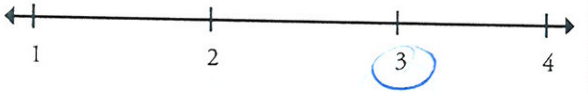
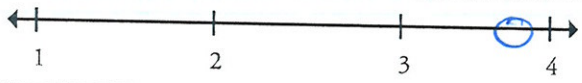
2010–2011

Reviewed By: [redacted]

Title of Instructional Materials: Holt McDougal Algebra I

ALGEBRA I — NUMBER AND QUANTITY (N)

The Real Number System (N-RN)

Extend the properties of exponents to rational exponents.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-RN.1 Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want (51/3)3 = $5(^{1/3})^3$ to hold, so $(5^{1/3})^3$ must equal 5.* **Indicate the chapter(s), section(s), and/or page(s) reviewed.** p 460-461 integer exponents 488-492 rat exponents	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — NUMBER AND QUANTITY (N)

The Real Number System (N-RN)

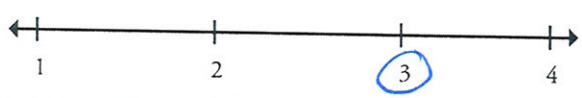
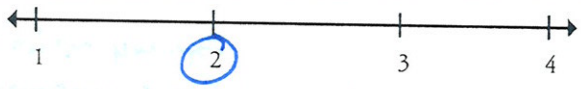
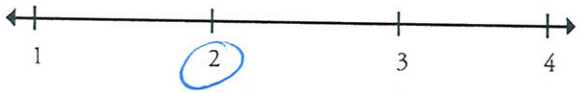
Extend the properties of exponents to rational exponents.	**Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.**
N-RN.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** p 490 -492	Important Mathematical Ideas 1 2 **3** 4 Skills and Procedures 1 2 **3** 4 Mathematical Relationships 1 2 **3** 4 **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 1 2 **3** 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — NUMBER AND QUANTITY (N)

The Real Number System (N-RN)

Use properties of rational and irrational numbers.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-RN.3 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** CC19-20	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

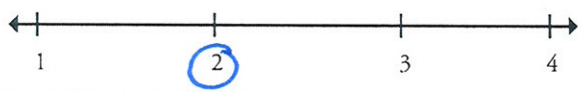
Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

N-Q.1

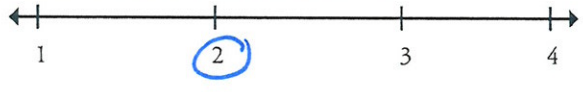
Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.*

Note: Foundation for work with expressions, equations and functions.

Important Mathematical Ideas



Skills and Procedures



Mathematical Relationships

Summary / Justification / Evidence

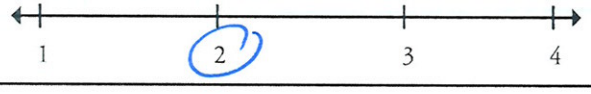
Most are just application examples or problems or embedded problems w/in hmwk

Indicate the chapter(s), section(s), and/or page(s) reviewed.

p 10, 16-18, 22-24, 30-31, 33, 36, 38-39, 43-45, 50, 60, 61, 64, 71, 86-90, 103-105, 111, 114-116, 119-126, 128-132, 136, 138, 153, 155-156, 158, 163, 178, 180, 185, 188, 192-194, 214, 229, 246, 254-255, 259-261, 264, 272, 278-279, 282-285, 293, 332-335, 341, 347-349, 355-357, 360, 574, 622, 624-625, 627-630, 637-638, 641, 644-646, 652-654, 660, 665-666, 678, 683, 800, 809-811

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

Overall Rating

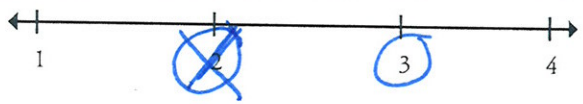
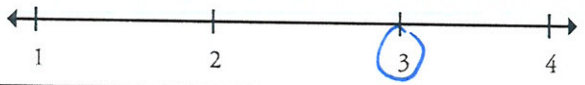


Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

Reason quantitatively and use units to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
N-Q.2 Define appropriate quantities for the purpose of descriptive modeling.* Note: Foundation for work with expressions, equations and functions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** p 120-126 700-708 79-715 CC3-CC9	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence** Supplemental material helps dramatically **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — NUMBER AND QUANTITY (N)

Quantities (N-Q)

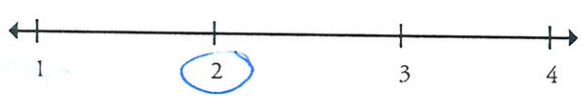
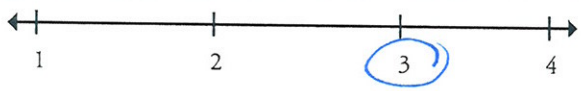
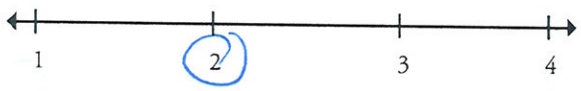
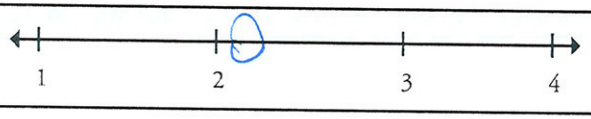
Reason quantitatively and use units to solve problems.	**Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.**
N-Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.* Note: Foundation for work with expressions, equations and functions. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** CC 3-9	Important Mathematical Ideas 1 2 (3) 4 Skills and Procedures 1 2 (3) 4 Mathematical Relationships 1 2 (3) 4 **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 1 2 (3) 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.1a 1. Interpret expressions that represent a quantity in terms of its context.* a. Interpret parts of an expression, such as terms, factors, and coefficients. Note: Linear, exponential, quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** p 10-11, 46-51 600 602	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence**
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any): no exponential or quadratic
	Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

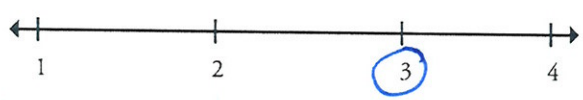
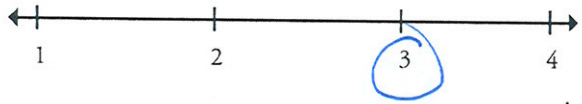
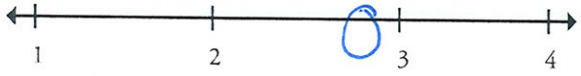
Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.1b 1. Interpret expressions that represent a quantity in terms of its context.* b. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.* Note: Linear, exponential, quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** p 46-51 550-594 586-593 595-599 602-603 749 845 867 p10-11 46-51 606 602	Important Mathematical Ideas: 1 2 3 4 (1) Skills and Procedures: 1 2 3 4 (1) Mathematical Relationships: 1 2 3 4 (1) **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** not really covered Overall Rating: 1 2 3 4 (1)

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Interpret the structure of expressions.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.2 Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.* Note: Linear, exponential, quadratic.	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence** focus on factoring
Indicate the chapter(s), section(s), and/or page(s) reviewed. p 46-51 550-584 586-593 595-599 602-603 749 845 867	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.3a 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* a. Factor a quadratic expression to reveal the zeros of the function it defines. Note: Quadratic and exponential.	Important Mathematical Ideas 1 2 **3** 4 Skills and Procedures 1 2 **3** 4 Mathematical Relationships 1 2 **3** 4 **Summary / Justification / Evidence** average coverage
Indicate the chapter(s), section(s), and/or page(s) reviewed. p 558-584 587-593 596-599 602 650-651 * 749 806-811 845 867	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 1 2 **3** 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-SSE.3b 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. Note: Quadratic and exponential.	Important Mathematical Ideas: 1 2 **3** 4 Skills and Procedures: 1 2 3 **4** Mathematical Relationships: 1 **2** 3 4 **Summary / Justification / Evidence** doesn't really tie in why but good procedures
Indicate the chapter(s), section(s), and/or page(s) reviewed. p 558-584 587-593 596-599 → I disagree w/ company + would say pg 663-669 602 749 845 867	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):**
	Overall Rating: 1 2 **3** 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Seeing Structure in Expressions (A-SSE)

Write expressions in equivalent forms to solve problems.

A-SSE.3c

3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.*
   c. Use the properties of exponents to transform expressions for exponential functions. *For example the expression* 1.15^t *can be rewritten as* $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ *to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*

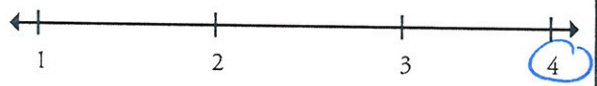
Note: Quadratic and exponential.

Indicate the chapter(s), section(s), and/or page(s) reviewed.

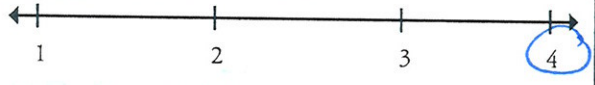
p 466 - 495

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.

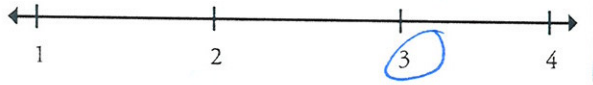
Important Mathematical Ideas



Skills and Procedures



Mathematical Relationships

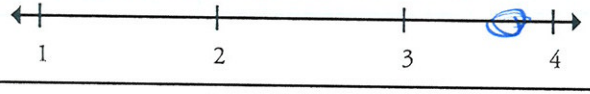


Summary / Justification / Evidence

not as drawn out as many texts, but seems to cover

Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):

Overall Rating



Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Arithmetic with Polynomials and Rational Expressions (A-APR)

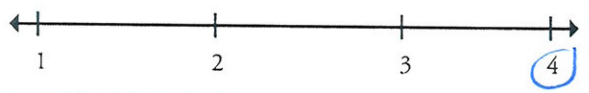
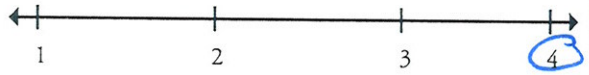
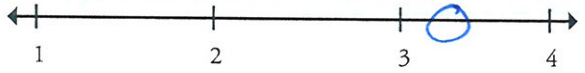
Perform arithmetic operations on polynomials.	**Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.**
A-APR.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. Note: Linear and quadratic. **Indicate the chapter(s), section(s), and/or page(s) reviewed.** p 504-509 512-519 521-527 CC 19-20 → Not polynomials (??)	Important Mathematical Ideas: 1 2 **3** 4 Skills and Procedures: 1 2 **3** 4 Mathematical Relationships: 1 2 3 **4** **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating: 1 2 **3** 4

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

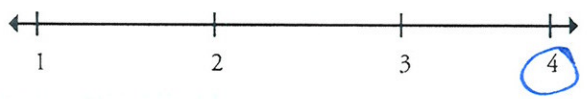
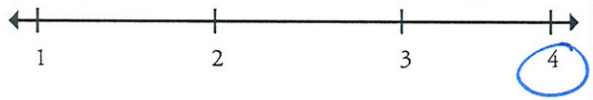
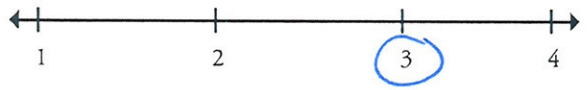
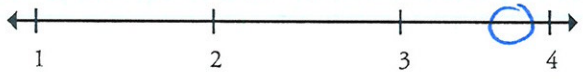
Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.1 Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.** Note: Linear, quadratic, and exponential (integer inputs only).	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence** examples included in many of the sections
Indicate the chapter(s), section(s), and/or page(s) reviewed. p 79-82, 86-89, 94-98, 102-106, 112-117, 133-149, 170-175, 177-181, 184-189, 192-195, 197-202, 214-224, 226-229, 650-661, 663-669, 670-677, 796-802	**Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** no creating exponential no creating quadratic
	Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

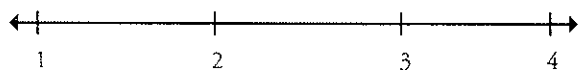
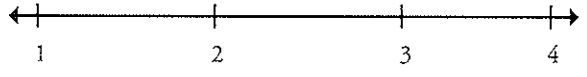
Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.* Note: Linear, quadratic, and exponential (integer inputs only). **Indicate the chapter(s), section(s), and/or page(s) reviewed.** P 249-262 300-312 314-321 324-329 336-341 344-358 361-367 369-375 397-402 404-417 420-425 626-631 633-635 642-647 670-677 805-819 871-885	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 

Reviewed By: _____

Title of Instructional Materials: _____

ALGEBRA I — ALGEBRA (A)

Creating Equations (A-CED)

Create equations that describe numbers or relationships.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.** Note: Linear (integer inputs only). **Indicate the chapter(s), section(s), and/or page(s) reviewed.**	Important Mathematical Ideas  Skills and Procedures  Mathematical Relationships  **Summary / Justification / Evidence** **Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):** Overall Rating 

Reviewed By: [redacted]

Title of Instructional Materials: Holt-McDougal Alg 1

(1)

Documenting Alignment to the Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

Reviewed By: _____

Title of Instructional Materials: _____

Documenting Alignment to the Standards for Mathematical Practice

2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

Indicate the chapter(s), section(s), or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

Overall Rating

CONTENT STANDARDS RUBRIC

Algebra 1

Interpreting Functions F-IF

Understand the concept of a function and use function notation

1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.
2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by* $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ *for* $n \geq 1$.

	Development	Connections	Rigor and Depth	Overall/Evidence
Mathematical Ideas	Are ideas conceptually developed (4) or approached from a simple skill level (1)?	Are ideas expanded to other math ideas (4) or developed independently of each other (1)?	Do ideas require extension of important ideas and the use of multiple approaches (4) or only using procedures and memorization (1)?	
	4 3 2 1	4 3 2 1	4 3 2 1	
Skills and Procedures	Are skills and procedures integrated with math ideas (4) or are they the primary focus of the lesson (1)?	Are skills and procedures connected to other ideas (4) or treated as isolated skills with no connection (1)?	Are skills and procedures critical to the application of other math ideas (4) or are they practiced without conceptual development (1)?	
	4 3 2 1	4 3 2 1	4 3 2 1	
Mathematical Relationships	Are math relationships evident to build understanding (4) or appear as a series of independent skills (1)?	Are relationships integrated with other math ideas (4) or are problems focusing on drill only(1)?	Do relationships require a broad use of math (4) or only require the use of skills and procedures (1)?	
	4 3 2 1	4 3 2 1	4 3 2 1	
Missing or weak content from this standard				

Overall for this Standard: _____

CONTENT STANDARDS RUBRIC
Algebra 1

Interpreting Functions F-IF

Interpret functions that arise in applications in terms of the context

4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*

5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*

6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.

	Development	Connections	Rigor and Depth	Overall/Evidence
Mathematical Ideas	Are ideas conceptually developed (4) or approached from a simple skill level (1)?	Are ideas expanded to other math ideas (4) or developed independently of each other (1)?	Do ideas require extension of important ideas and the use of multiple approaches (4) or only using procedures and memorization (1)?	#6 Slope p. 324
	4 3 2 1	4 3 2 1	4 3 2 1	
Skills and Procedures	Are skills and procedures integrated with math ideas (4) or are they the primary focus of the lesson (1)?	Are skills and procedures connected to other ideas (4) or treated as isolated skills with no connection (1)?	Are skills and procedures critical to the application of other math ideas (4) or are they practiced without conceptual development (1)?	
	4 3 2 1	4 3 2 1	4 3 2 1	
Mathematical Relationships	Are math relationships evident to build understanding (4) or appear as a series of independent skills (1)?	Are relationships integrated with other math ideas (4) or are problems focusing on drill only(1)?	Do relationships require a broad use of math (4) or only require the use of skills and procedures (1)?	
	4 3 2 1	4 3 2 1	4 3 2 1	

Missing or weak content from this standard

Overall for this Standard: 1